

## WILDLIFE MANAGEMENT UNIT 19 - WEST DESERT

### Boundary Description

**Tooele, Utah, Juab, and Millard counties** - Boundary begins at the Utah-Nevada state line and I-80 in Wendover; east on I-80 to the Dugway road at Rowley Junction; south on this road to the Pony Express Road; east on this road to SR-36; north on SR-36 to SR-73; east on SR-73 to I-15; south on I-15 to US-6 at Santaquin, west and southwest on US-6 to its junction with US-50 near Delta; west on US-50 and 6 to the Utah-Nevada state line; north along this state line to I-80 at Wendover.

### Management Unit Description

Management unit 19 is subdivided into three smaller subunits, Deep Creek (19A), Vernon (19B), and Tintic (19C). Of the total land area within unit 19, the majority is categorized as either transitional or winter range. Winter, transitional, and summer ranges make up 61%, 23%, and 16% of the area, respectively. The vast majority of the land within unit 19 is managed by the Bureau of Land Management.

As with nearly all of the management units within the state, the deer herds are managed to achieve a buck to doe ratio of 15:100, with 30% of the bucks being 3-point or better. The estimated winter herd size was 7,650 in 2002, 6,200 in 2003, 6,900 in 2004, and 7,000 in 2005. The management plan calls for a wintering population of 11,200 deer (Hersey and McLaughlin 2005). The management plan objectives for elk in this unit are 200 wintering animals. This objective was reached from 2002 to 2005 (Hersey and McLaughlin 2005). Most of the elk in this unit are found on the Deep Creek (subunit 19A).

### Population and Habitat Management Strategies

The Vernon subunit (19B) is currently managed under the limited entry hunting status. Other portions of unit 19 are open to general season hunting for deer. Some factors that may limit success in reaching management objectives include drought conditions, crop depredation, habitat loss, and predation by cougars. To minimize these limiting factors, the following habitat management strategies will be used: 1) monitor the permanent range trend studies throughout the unit, 2) maintain and/or enhance forage production through direct range improvements throughout the unit, and 3) work with private and federal agencies to maintain and protect critical summer ranges from future losses and degradation (Deer Herd Unit Management Plan 2001).

WILDLIFE MANAGEMENT UNIT 19 - WEST DESERT  
SUBUNIT 19B - WEST DESERT, VERNON

Subunit 19B Boundary Description

**Tooele and Juab Counties** - Boundary begins at the junction of SR-36 and the Pony Express Road; north on SR-36 to SR-73; east on SR-73 to I-15; south on I-15 to US-6 at Santaquin; west on US-6 to SR-174; northwest on SR-174 to the Dugway Valley Road; north on this road to the Pony Express Road; northeast on this road to SR-36 returning to the beginning point.

Subunit Description

The 19B Vernon subunit encompasses the Simpson, Sheeprock, and West Tintic Mountains. Trend studies are concentrated primarily in the East Tintic and Sheeprock Mountains. Predation on fawns has been a major problem on the Vernon subunit. In 1996, a predator management plan was implemented and several coyote dens were destroyed in the immediate vicinity of prime deer fawning areas. Two other issues that affect big game in the subunit are the availability of summer range, and wildfires. Due to the relatively low elevation of these desert mountain ranges, there is a lack of quality summer range. Large wildfires burned large areas of this unit between 1996 and 2002. Much of the burned areas have been seeded in restoration projects. The success of these projects in restoring deer winter habitat is in question, as browse re-establishment has been limited. However, the projects have been successful in establishing stands of perennial grasses.

Big Game Management Objectives

According to the 2005 Utah Annual Big Game Report, the current management objective is to maintain a herd of 11,200 wintering deer for the entire management unit. The estimated herd size decreased from 7,650 deer in 2002 to 6,200 deer in 2003, then increased to 7,000 deer by 2005. The buck:doe ratio has averaged 13:100 from 2003 to 2005, and is slightly below the objective of 15-20 bucks per 100 does. From 1999 to 2005 the fawn:doe ratio has averaged 68:100 (Hersey and McLaughlin 2006). The Vernon subunit was closed to all hunting in 1997, and reopened as a limited entry hunting unit in 2000. In 2002, 149 limited entry deer tags were permitted. In 2007, 76 buck-only, limited entry tags were permitted.

The current elk management objective is to maintain a winter herd population of 200 for the entire management unit (Hersey and McLaughlin 2006). However, only the elk population in the Deep Creek Mountains (subunit 19A) are actively managed.

Trend Study Description

The number of studies in subunit 19B has fluctuated as existing studies were suspended, new studies were added, and as the subunit boundaries were realigned. Eighteen studies were originally established in the Vernon subunit in 1983. Eight studies were located on winter range and the other 10 studies were located on summer range. All 18 studies were re-sampled in the summer of 1989. In 1997, all but two studies were re-sampled, South Pine Canyon (19B-8) and Old Canyon (19B-17). At South Pine Canyon, sampling was postponed because a fire removed all browse species from the site in 1996. Old Canyon was not sampled due to a lack of wildlife use, and the study was suspended. Four studies were added to the subunit in 1998 to monitor post-fire restoration efforts: Paul Bunyon Burn (19B-19), Paul Bunyon Burn and Chain (19B-20), Jericho State Section (19B-21) and Jericho BLM (19B-22). In 2002, all but three of the studies were re-sampled, North Oak Brush Canyon (19B-9), Water Canyon (19B-11), and Black Rock Canyon (19B-14). These three studies were suspended in 2002 after consulting with the regional biologist, as they no longer represent key areas or are not representative of critical deer range.

In 2007, the subunit boundaries had been realigned and seven of the 18 studies from 19B were moved to subunit 21A. The 11 remaining studies were sampled in 2007. Although it was sampled in 2007, it has been recommended that Judd Creek (19B-7) be suspended from further sampling because of access problems.

## SUMMARY

### WILDLIFE MANAGEMENT SUBUNIT 19B - WEST DESERT, VERNON

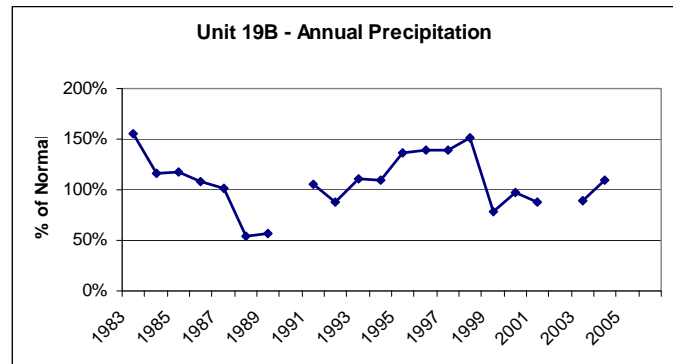
Eight of the trend studies in this management unit were established in 1983 and re-sampled in 1989, 1997, 2002, and 2007. One study, South of Pine Canyon (19B-8) was not re-sampled in 1997 because of a wildfire.

#### Community Types

The studies in this unit primarily monitor sagebrush, mountain brush, and salt desert shrub/grass communities. Specifically, two monitor Wyoming big sagebrush (*Artemisia tridentata* ssp. *wyomingensis*) communities, two monitor mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*) communities, and five monitor mountain brush communities.

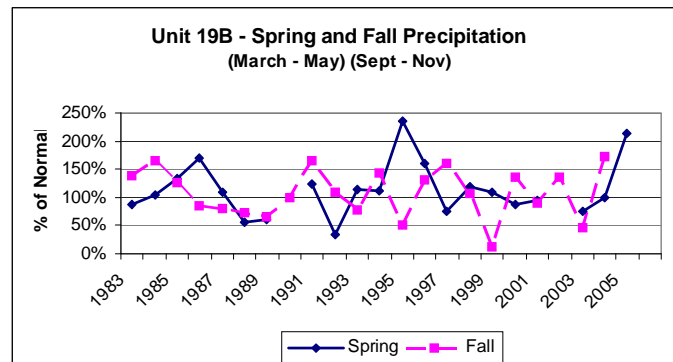
#### Precipitation

Both annual and seasonal precipitation play important roles in vegetation trends. The only weather station located within the boundaries of unit 19B is in Vernon. Data from this weather station were summarized for precipitation patterns over the past two decades. The average annual precipitation during that time was 10.7 inches (27.2 cm). Precipitation data were not complete in 1990, 2002, 2005, 2006. Drought conditions (less than 75% of annual precipitation) occurred in 1988 and 1989. Precipitation was below normal in 1992, 1999, 2000, 2001, and 2003 (Figure 1).



**Figure 1.** Annual precipitation for subunit 19B. Precipitation data was collected at a weather station in Vernon, Utah (Utah Climate Summaries 2007).

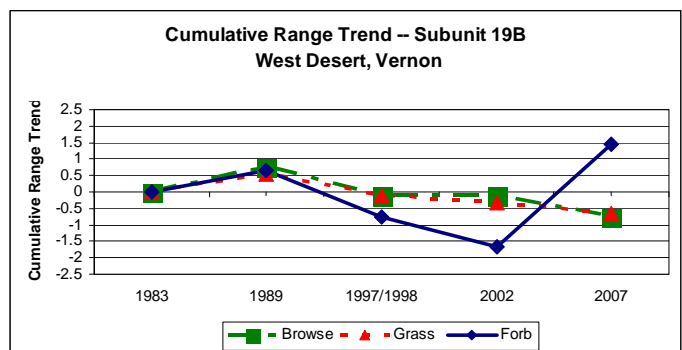
Spring and fall precipitation may be as critical as total precipitation for cool and warm season plant germination and growth. Precipitation data was partitioned into the amount that accumulated in the spring and fall. Spring precipitation was below 75% of normal in 1988, 1989, and 1992 (Figure 2). Spring precipitation was below normal in 1983, 1997, 2000, 2001, and 2003. Fall precipitation was below 75% of normal in 1988, 1989, 1995, 1999, and 2003. Fall precipitation was below normal in 1986, 1987, 1993, and 2001.



**Figure 2.** Spring and fall precipitation for subunit 19B. Precipitation data was collected at a weather station in Vernon, Utah (Utah Climate Summaries 2007).

#### Browse

The cumulative browse trend slightly decreased since 2002 (Figure 3). The browse trend was down at five studies: Sabie Mountain (19B-1), Harker Canyon (19B-4), West Government Creek (19B-5), Lee's Creek (19B-6), and Upper Broad Creek (19C-15). The browse trend was stable at two studies: Upper Little Valley (19B-2) and Judd Creek (19B-7). The browse trend was slightly up at Bennion Creek (19B-3), and was up at South Pine Canyon (19B-8). By community types, the browse trend was up at one of the mountain brush studies,



**Figure 3.** The cumulative range trend for the browse, grass, and forb components from 1983 to 2007 in subunit 19B.

slightly up at another, stable at two studies, and down at one study. The browse trend was down at both of the mountain big sagebrush studies, as well as both of the Wyoming big sagebrush studies.

The subunit average density of Wyoming big sagebrush decreased from 2,227 plants/acre (5,512 plants/ha) in 2002 to 1,593 plants/acre (3,943 plants/ha), which is similar to the average density in 1997 (Figure 4). The average density of mountain big sagebrush populations increased from 1,453 plants/acre (3,713 plants/ha) to 2,947 plants/acre (7,294 plants/ha). The largest increase in density was measured at South Pine Canyon. Black sagebrush (*Artemisia nova*) was only present at one study, Bennion Creek, and the density remained stable.

The subunit average percent decadence of Wyoming big sagebrush decreased from 33% of the population in 2002 to 27% in 2007, but was still higher than the 1997 estimate of 13% (Figure 5). The subunit decrease in decadence was largely attributed to a decrease at Judd Creek, a mountain brush site. Decadence increased at the two remaining Wyoming big sagebrush studies. The average decadence of mountain big sagebrush decreased from increased from 17% of the population in 1997 to 24% in 2002, then decreased to 18% in 2007. Decadence levels of black sagebrush remained stable at the one study where it was sampled.

The subunit average percent cover of Wyoming big sagebrush, mountain big sagebrush, and black sagebrush remained stable (Figure 6). The largest change in cover occurred at South Pine Canyon; mountain big sagebrush cover increased from less than 1% to 12%.

### Grass

Since 2002, the subunit grass trend decreased slightly (Figure 3). The grass trend was down at four studies: Upper Little Valley, Bennion Creek, Harker Canyon, and South Pine Canyon. The grass trend was stable at four studies: Sabie Mountain, West Government Creek, Lee's Creek, and Upper Broad Canyon. The grass trend was up at Judd Creek..

The subunit average sum of nested frequency of perennial grasses decreased slightly in 2007 (Figure 7). The average percent cover occupied by perennial grasses slightly increased in 2007 (Figure 8). Cheatgrass nested frequency and cover decreased from 1997 to 2002, then increased in 2007. It was most abundant at Upper Little Valley and South Pine Canyon. Cheatgrass was sampled for the first time at Sabie Mountain in 2007.

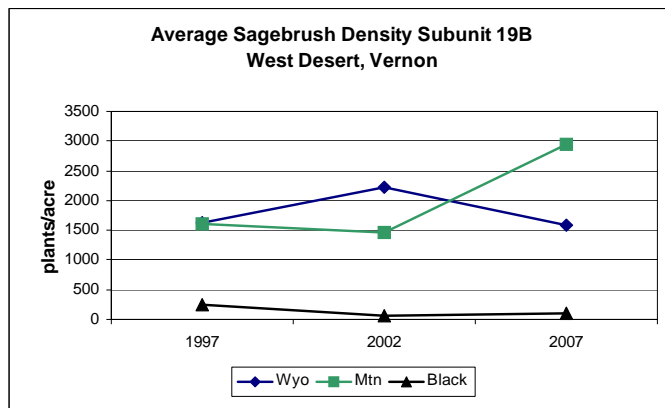


Figure 4.. Average density among Wyoming big sagebrush, mountain big sagebrush, and black sagebrush populations in subunit 19B.

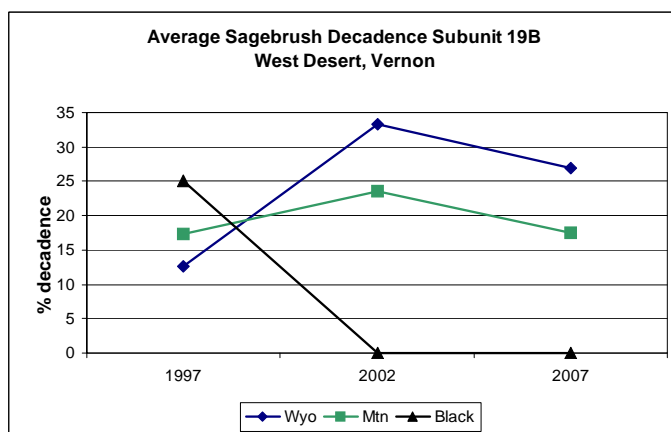


Figure 5. Average percent decadence among Wyoming big sagebrush, mountain big sagebrush, and black sagebrush populations in subunit 19B.

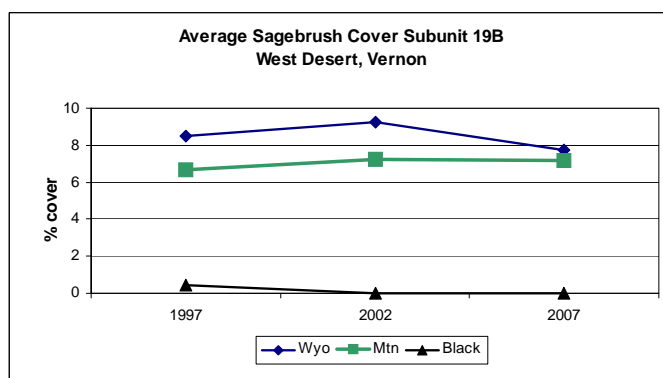


Figure 6. Average percent cover of Wyoming big sagebrush, mountain big sagebrush, and black sagebrush in subunit 19B.

Bulbous bluegrass was measured for the first time at two studies in 2007, Bennion Creek and Judd Creek, but nested frequency and percent cover were low.

### Forb

The subunit average forb trend increased substantially since 2002 (Figure 3). The forb trend was slightly down at Lee's Creek and was stable at Upper Broad Canyon. The forb trend was up at the remaining seven studies: Sabie Mountain, Upper Little Valley, Bennion Creek, Harker Valley, West Government Creek, Judd Creek, and South Pine Canyon. All but one of these studies, Judd Creek, are located in the Sheeprock Mountains.

The subunit average sum of nested frequency of perennial forbs increased more than three-fold in 2007, but was still less than 1997 (Figure 7). The average percent cover of perennial forbs increased from 2% to 5% in 2007, but was still below the 1997 percent cover (Figure 8). The decrease in forb cover and nested frequency in 2002 was attributed to a region-wide drought (Utah Climate Summaries 2007). Houndstongue, a noxious weed, was sampled at Bennion Creek in 2002.

### Desirable Components Index

The winter range Desirable Components Index (DCI) was calculated for six of the nine studies in subunit 19B. Three of these studies are in the low potential category and three are in the mid-level potential category. The three studies not calculated were excluded because they are classified as summer range. The average DCI score of the mid-level potential studies decreased from fair in 1997 to very poor-poor in 2002, then increased to poor in 2007 (Figure 9). The changes have resulted largely from fluctuations in browse cover and decadence, and perennial grass cover. At the low potential studies, the average DCI score has consistently been good.

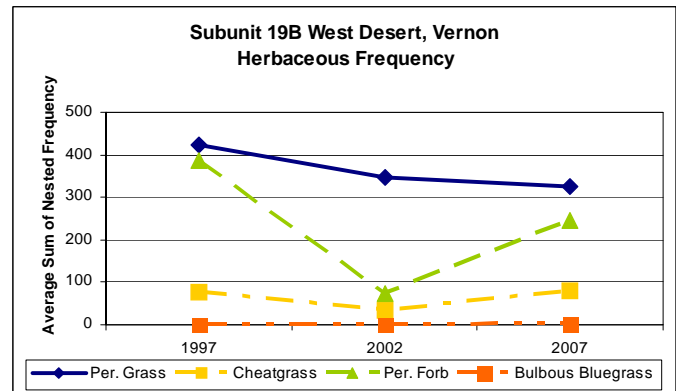


Figure 7. Average sum of nested frequency for the herbaceous understory in subunit 19B.

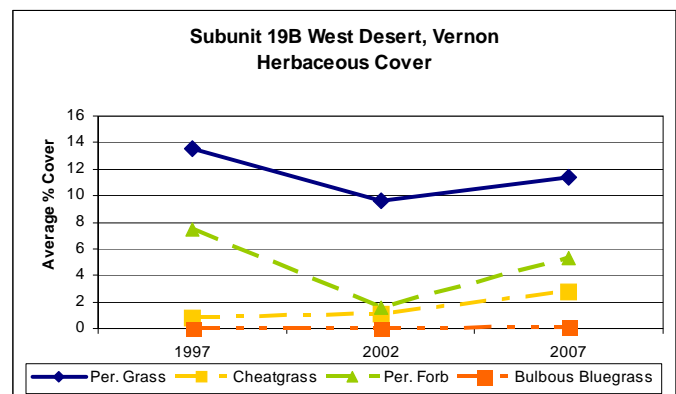


Figure 8. Average percent cover for the herbaceous understory in subunit 19B.

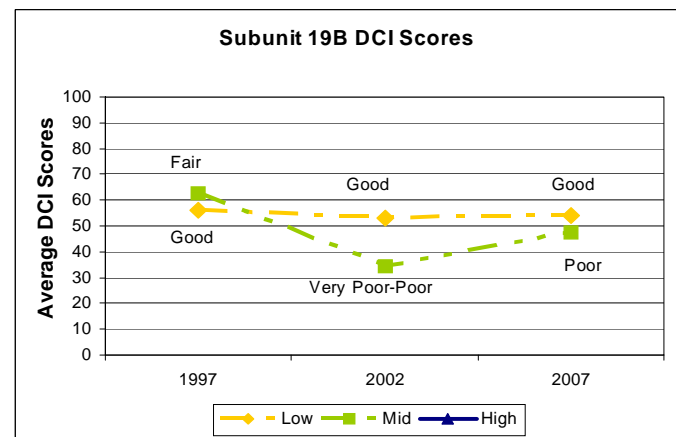


Figure 9. Average DCI score for subunit 19B. The scores are divided into categories based on ecological potential and include: high, mid-level, and low.